CORRES. CONTROL
OUTGOING LTR NO.

DOE ORDER # _____
93 RF 14661

DIST.	LTR	ENC
AMARAL, M.E.		
BENEDETTI, R.L.	X	
BENJAMIN, A.		
BERMAN, H.S.		
BRANCH, D.B.		
CARNIVAL, G.J.		
COPP, R.D.		
DAVIS, J.G.		
FERRERA, D.W.		
HANNI, B.J.		
HARMAN, L. K.		
HEALY, T.J.		
HEDAHL, T.		
HILBIG, J.G.		
KIRBY, W.A.		
KUESTER, A.W.		
MANN, H.P.	X	
MARX, G.E.		
McDONALD, M.M.		
McKENNA, F.G.		
MONTROSE, J.K.		
MORGAN, R.V.		
POTTER, G.L.		
PIZZUTO, V.M.		
RILEY, J.H.		
RISING, T.L.		
SANDLIN, N.B.		
SETLOCK, G.H.		
STEWART, D.L.		
SULLIVAN, M.T.		
SWANSON, E.R.		
WILKINSON, R.B.	X	
WILLIAMS, S. (ORC)		
WILSON, J. M.		
WYANT, R.B.		
Nyquist, S.L.	X	
CORRES CONTROL	X	X
ADMIN RECORD (2)	X	X
PATS/T130G		
TRAFFIC		

CLASSIFICATION:

UCNI		
UNCLASSIFIED		
CONFIDENTIAL		
SECRET		

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DOCUMENT CLASSIFICATION REVIEW WAIVER PER CLASSIFICATION OFFICE
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IN REPLY TO RFP CC NO:

ACTION ITEM STATUS
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☐ CLOSED
LTR APPROVALS:

ORIG & TYPIST INITIALS
MAS/lmw

RF-46469 (Rev. 7/93)

EG&G ROCKY FLATS

000013468

EG&G ROCKY FLATS, INC.
ROCKY FLATS PLANT, P.O. BOX 464, GOLDEN, COLORADO 80402-0464 • (303) 966-7000

December 2, 1993 93-RF-14661

R. J. Schassburger
Acting Director
Environmental Restoration Division
DOE, RFO

Attn: S. R. Surovchak

VERIFICATION OF SAMPLE TRACEABILITY TO INVESTIGATIVE DERIVED MATERIAL (IDM) CONTAINERS (ARE DRUMS CLEAN OR NOT?) - NMH-619-93

1.0 INTRODUCTION

Environmental Restoration, using FO.23 as guidance, screened the Operable Unit 1 (OU1) and Operable Unit 2 (OU2) data using the 99/99 Upper Tolerance Levels (UTLs) for metals (values from the *1993 Background Geochemical Characterization Report*) and the result-qualifier field (all results not equal to "U") a screen for organics. Basically, any detect for any organic resulted in the drum being initially listed as "not clean". All data for such drums were compiled in Statistical Analysis Systems (SAS) files for subsequent analysis.

The files for metals and organics were evaluated separately. Discussion with J. R. Fitzsimmons (Waste Tech Support) indicated that only those components on the Resource Conservation and Recovery Act (RCRA) D-List and the RCRA F-List (40 CFR 216) must be evaluated in order to release the drums from RCRA interim storage. In accordance with this guidance, the final data sets for metals and Volatile Organic Analytes (VOAs) (METS02 and VOAS04, respectively) evaluate only the D-List and F-List components.

Hard-copy output of the final generation of the data sets is provided with this report. All drums containing one or more detects of a RCRA-regulated component are listed in the printouts that follow this brief text. More than 2,500 drums were evaluated.

2.0 EVALUATION OF METALS DATA FOR IDM DRUMS

The original file contained 12,003 observations that had been flagged as exceeding the 99/99 UTLs. Salient data from this initial data set - including all analytes and all drums - were printed out as a hard-copy record and reviewed. Observations for which results and validated results were missing were then dropped from the working data set. In the next step, essential rock-forming elements (Al, Ca, Fe, Mg, K, Si, Na) were dropped from the data set, cutting the number of observations to about 4,700. Finally, only regulated metals from the RCRA D-List (40 CFR 261.30) were printed out in a matrix showing drum number by regulated metal. The measured concentrations are not given on this printout, but

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ADMIN RECORD

A-OU11-000185

every drum that exceeded the 99/99 UTL for a RCRA-regulated metal is included on this list. Approximately 445 drums are included on this list, but it should be kept in mind that not all drums listed here may contain metal concentrations greater than the regulatory concentration. In addition to evaluating metals concentrations by a comparison with the 99/99 UTLs, a review of the crustal abundances of naturally occurring elements is recommended. A table presenting the average abundances of elements in the earth's crust (Krauskopf, 1979) is included to provide a "reality check" for reviewers of this report.

3.0 EVALUATION OF VOAS DATA FOR IDM DRUMS

The initial list (data set "VOAS01") of detected observations for organic analytes contained 24,694 records. Approximately 4,000 of these records were for "tentatively identified compounds" (TICs); these observations were eliminated from the next generation of the data set (VOAS02). The next step taken was to eliminate those observations for which the result-qualifier field was blank, but the result was less than the reported detection limit. Validated results and validated detection limits were used where available; otherwise, the result and detection limit reported by the lab were used (data set VOAS03). Finally, all results for which the given analyte was detected in the field blank or lab blank were dropped from the data set (VOAS04). Those analytes that were also found in the corresponding blank are flagged with a "B" in the qualifier field of the data set.

Using the above methodology, the fourth-generation data set (VOAS04) contains 11,654 observations. However, the number of flagged drums is not substantially reduced from that of the first-generation data set. The associated analytical data indicate that approximately 2,120 drums have one or more detected volatile organic compounds.

4.0 SUMMARY AND RECOMMENDATIONS

The work performed for this report meets the required action to identify those drums containing detectable concentrations of RCRA-regulated components. However, a more thorough review of the data (i.e., examining every record) will be required to adequately assess the necessity of keeping a given drum under RCRA-managed storage. For example, many drums on the list for detected VOAs have only one detect for a given drum, whereas other drums have 60 or more detects. Clearly, any one drum with numerous detected concentrations of RCRA-regulated components is a candidate for continued RCRA management. However, the decision of how to proceed in the case of drums with only one or two detects, is a policy decision that must be made prior to further data analysis.

It is the recommendation of EG&G that the Department of Energy request concurrence from the Colorado Department of Health on the above methodology and also for excluding drums with few detections of VOAs at low concentrations from those drums requiring RCRA-management. The total number of drums that must be RCRA-managed will be a function of the method of

evaluation, as well as the concentrations of RCRA-regulated chemicals contained in the drummed Investigative Derived Materials.

Attached please find the RCRA D-Lists and the RCRA F-Lists. If you should have any questions, please contact Mary Siders at extension 6933.

N. M. Hutchins, Acting
Associate General Manager
Environmental Restoration Management
EG&G Rocky Flats, Inc.

MAS:lmw

Orig. and 1 cc - R. J. Schassburger

Attachment:
As Stated

cc:
A. H. Pauole - DOE, RFO
M. N. Silverman - " "

RCRA D-LIST

Analyte	
Arsenic	5.0 MG/L
Barium	100.0 MG/L
Cadmium	1.0 MG/L
Chromium	5.0 MG/L
Lead	5.0 MG/L
Mercury	0.2 MG/L
Slenium	1.0 MG/L
Silver	5.0 MG/L
Benzene	0.5 MG/L
Carbon tetrachloride	0.5 MG/L
Clordane	0.03 MG/L
Chlorobenzene	100.0 MG/L
Chloroform	6.0 MG/L
o-Cresol	200.0 MG/L
m-Cresol	200.0 MG/L
p-Cresol	200.0 MG/L
Cresol	200.0 MG/L
2,4-D	10.0 MG/L
1,4-Dichlorobenzene	7.5 MG/L
1,2-Dichlorobenzene	0.5 MG/L
1,1-Dichlorobenzene	0.7 MG/L
2,4-Dinitrotoluene	0.13 MG/L
Endrin	0.02 MG/L
Heptachlor (and its epoxide)	0.008 MG/L
Hexachlorobenzene	0.13 MG/L
Hexachlorobutadiene	0.5 MG/L
Hexachloroethane	3.0 MG/L
Lindane	0.4 MG/L
Methoxychlor	10.0 MG/L
Methy ethyl ketone (2-Butanone)	200.0 MG/L
Nitrobenzene	2.0 MG/L
Pentachlorophenol	100.0 MG/L
Pyridine	5.0 MG/L
Tetrachloroethylene	0.7 MG/L
Toxaphene	0.5 MG/L
Trichloroethylene	0.5 MG/L
2,4,5-Trichlorophenol	400.0 MG/L
2,4,6-Trichlorophenol	2.0 MG/L
2,4,5-TP (Silvex)	1.0 MG/L
Vinyl chloride	0.2 MG/L

Analyte

(F001)

Tetrachloroethylene
Trichloroethylene
Methylene chloride
1,1,1-Trichloroethane
Carbon Tetrachloride
Chlorinated fluorcarbons

(F002)

Chlorobenzene
1,1,2-Trichloro-1,2,2-trifluoroethane
Ortho-Dichlorobenzene
Tirchlorofluoromethane
1,1,2-Trichloroethane

(F003)

Xylene
Acetone
Ethyl acetate
Ethyl benzene
Ethyl ether
Methyl isobutyl ketone
n-Butyl alcohol
Cyclohexanone
Methanol